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Characterization of rat myofibroblasts isolated from liver portal tracts using explantation technique

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Abstract

Today there is no effective approach to treat liver fibrosis and the only way is transplantation of donors' liver. Investigation of molecular-cellular mechanisms of liver fibrosis can help to discover new ways of slowing down or even reverse the process of fibrogenesis in liver. For a long time hepatic stellate cells were undeservingly blamed for being the major causer of liver fibrosis, because they were considered as the main source of myofibroblasts, that synthesize connective tissue extracellular matrix. In this particular work explantation approach was used to isolate cell culture from portal tracts. It was shown that received cells are portal fibroblasts, and, just as hepatic stellate cells, in case of liver alteration can differentiate in myofibroblasts, that express α-smooth muscle actin. During long-term cultivation it was shown that portal myofibroblasts can differentiate into fibroblasts and back on late passages. So, we can conclude, that there is a potency to reverse the process of fibrogenesis in liver.

Keywords

Hepatic stellate cells, Liver fibrosis, Myofibroblasts, Portal fibroblasts